

Paddington Green Police Station
2 – 4 Harrow Road, London, W2 1XJ

Energy Statement – Part 2

WSP

01/04/2021



Berkeley Homes (Central London) Ltd.

Paddington Green Police Station

Energy Statement

PGPS-WSP-XX-XX-ST-ES-0001_P03

April 2021





Berkeley Homes (Central London) Ltd.

Paddington Green Police Station, Westminster

Energy Statement

Project No: 70069424

April 2021

WSP
WSP House
70 Chancery Lane
London
WC2A 1AF

0207314 5000

wsp.com



QUALITY CONTROL

Issue/revision	First issue	Revision P01	Revision P02	Revision 3
Remarks	Draft	Draft Planning Submission	Final Planning Submission	Final Planning Submission with GLA evidence
Date	March 2021	19 March 2021	31 st March 2021	1 st April
Prepared by	Michela Martini	Michela Martini	Michela Martini	Michela Martini
Signature				
Checked by	JC	Stephen Gallacher	Jacob Cox	Jacob Cox/Stephen Gallacher
Signature				
Authorised by		Stephen Gallacher	Stephen Gallacher	Nick Remington
Signature				
Project number	70069424	70069424	70069424	70069424
Report number		PGPS-WSP-XX-XX-ST-ES-0001	PGPS-WSP-XX-XX-ST-ES-0001	PGPS-WSP-XX-XX-ST-ES-0001
File reference				

PRODUCTION TEAM

WSP GLOBAL INC. (WSP)

Principal Energy Engineer

Michela Martini

Associate Director

Stephen Gallacher

Project Director

Nick Remington

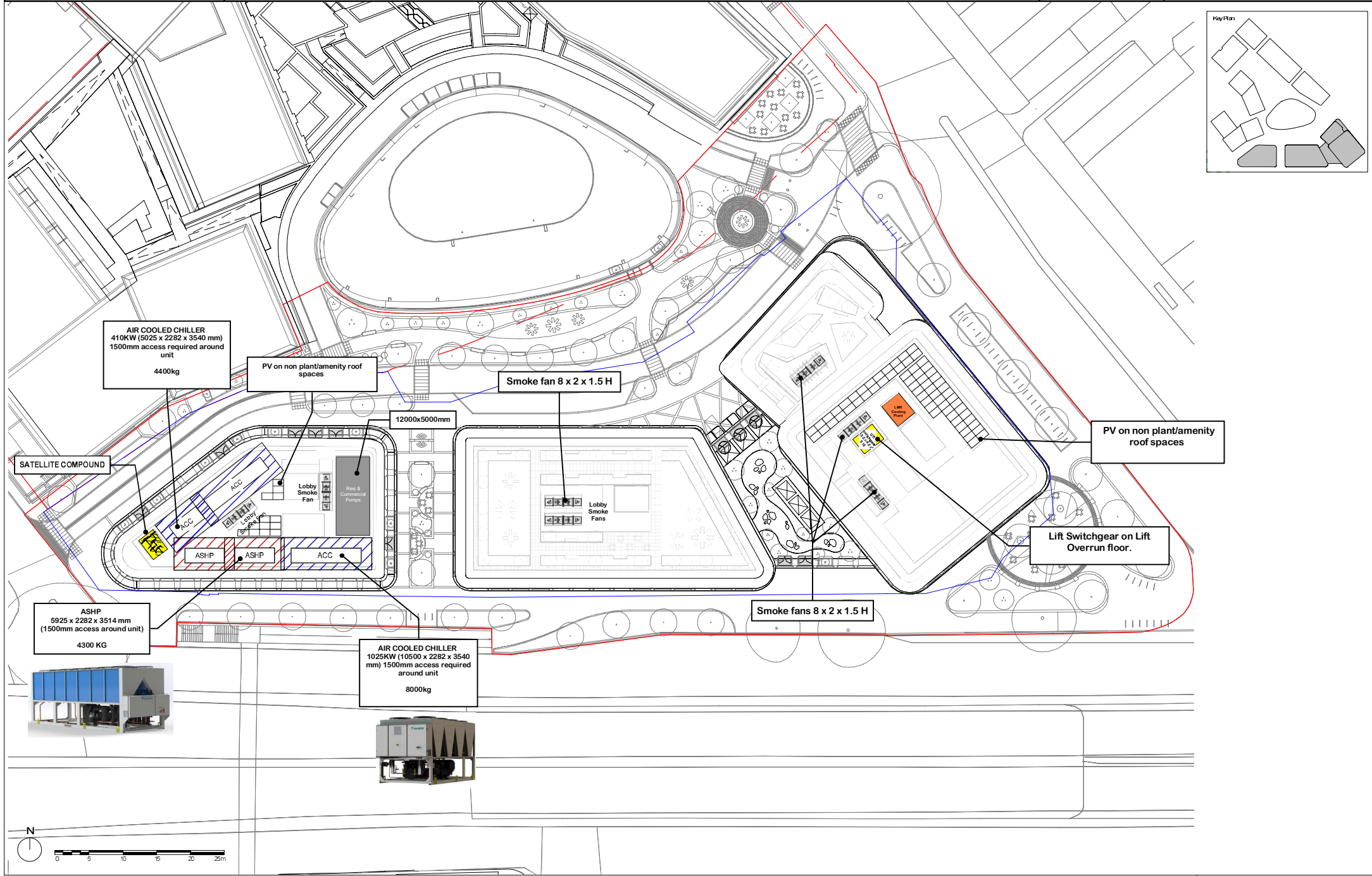
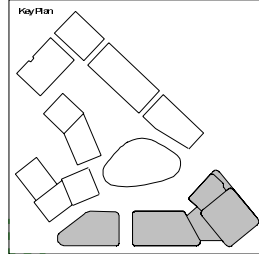
15 APPENDIX C

15.1 MEP DRAWINGS AND HEAT PUMPS MANUFACTURER SPECIFICATIONS



Project: Paddington Green Police Station
 Title: PGPS - MEP Roof Plant

Made by: AA	Job No. 70069424	Date. 19/03/21
Checked by: NR	Revision. P01	Page No. 1 of 1
		Sketch No. PGPS-WSP-SK-CS-0006



AIR COOLED CHILLER
 410KW (5925 x 2282 x 3540 mm)
 1500mm access required around unit
 4400kg

PV on non plant/amenity roof spaces

Smoke fan 8 x 2 x 1.5 H

SATELLITE COMPOUND

1200x5000mm

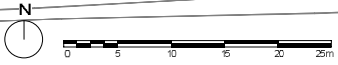
PV on non plant/amenity roof spaces

Lift Switchgear on Lift Overrun floor.

ASHP
 5925 x 2282 x 3514 mm
 (1500mm access around unit)
 4300 KG

Smoke fans 8 x 2 x 1.5 H

AIR COOLED CHILLER
 1025KW (10500 x 2282 x 3540 mm)
 1500mm access required around unit
 8000kg

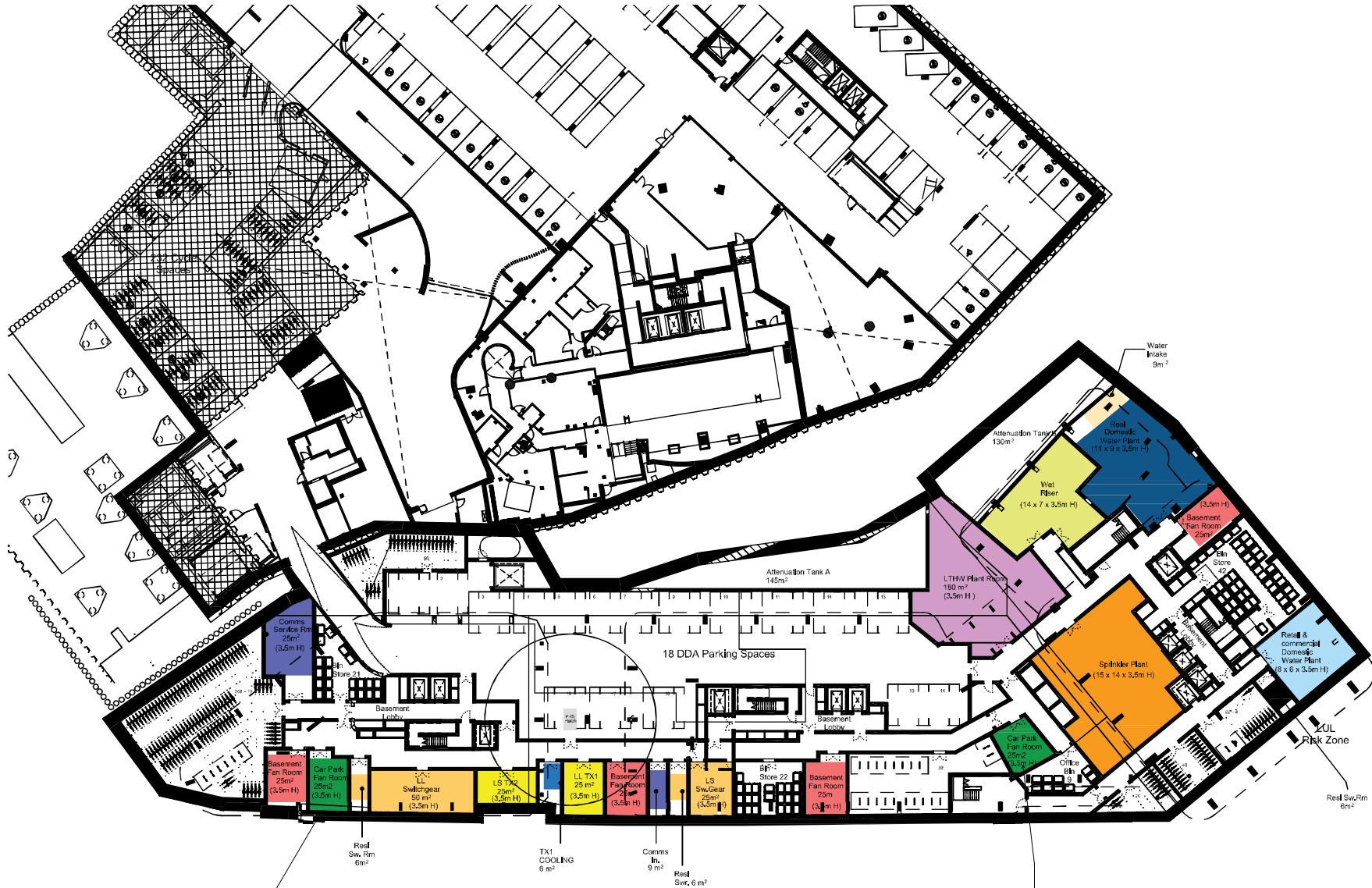




Project:
Paddington Green Police Station

Title:
MEP BASEMENT & GROUND FLOOR PLAN

Made by:	JR/RR/AA	Job No.	70069424	Date.	19/03/21
Checked by:	NR	Revision.	P01	Page No.	1
			Sketch No.	PGPS-WSP-SK-CS-0007	



PLEASE REFER TO BASEMENT VENT DRAWING FOR CURRENT PLANTROOM LOCATION

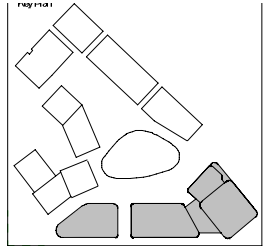
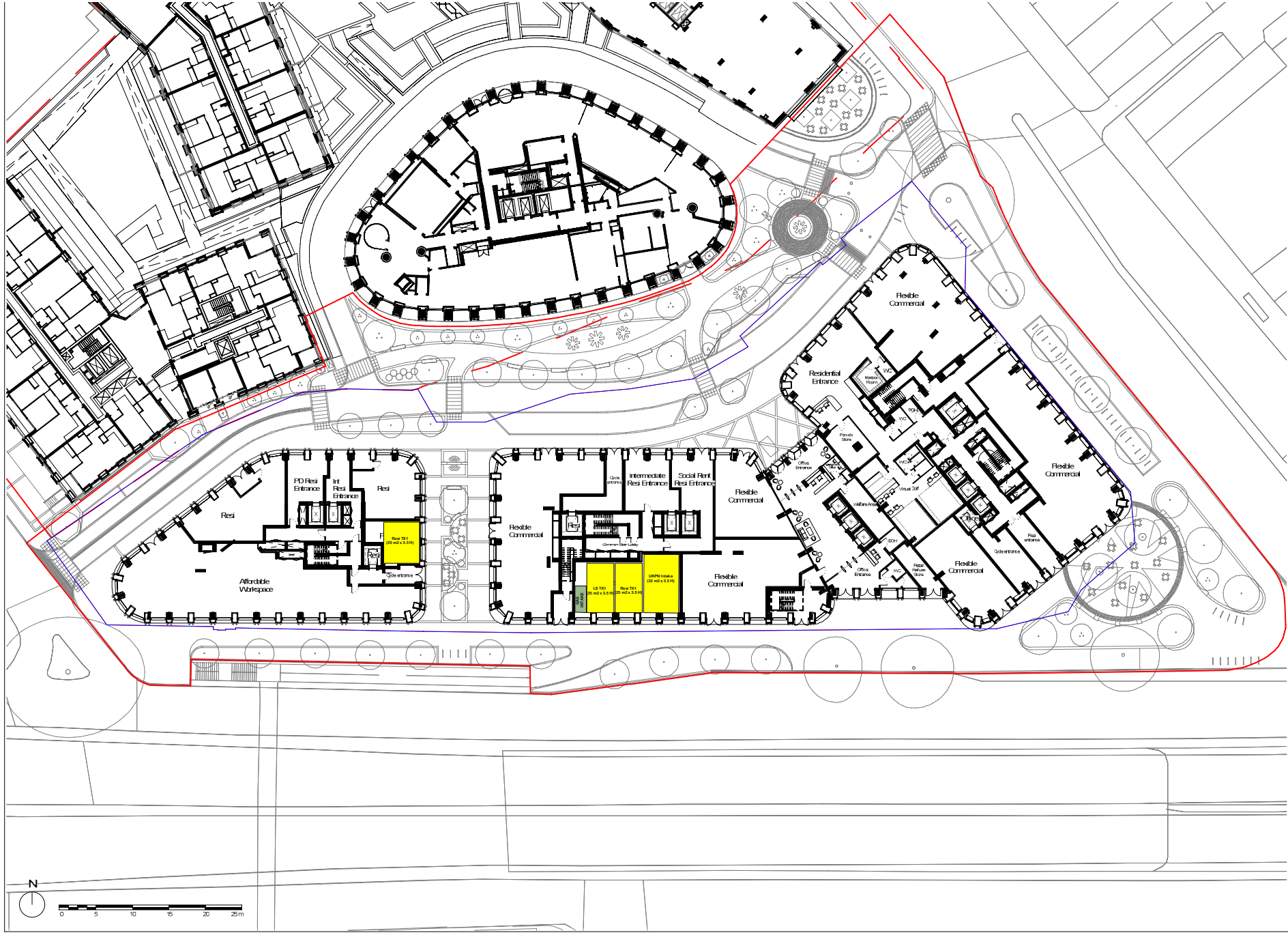
PLEASE REFER TO BASEMENT VENT DRAWING FOR CURRENT PLANTROOM LOCATION



Project:
Paddington Green Police Station

Title:
MEP BASEMENT & GROUND FLOOR PLAN

Made by: JR/RR/AA	Job No. 70069424	Date. 19/03/21
Checked by: NR	Revision. P01	Page No. 2
		Sketch No. PGPS-WSP-SK-CS-0007

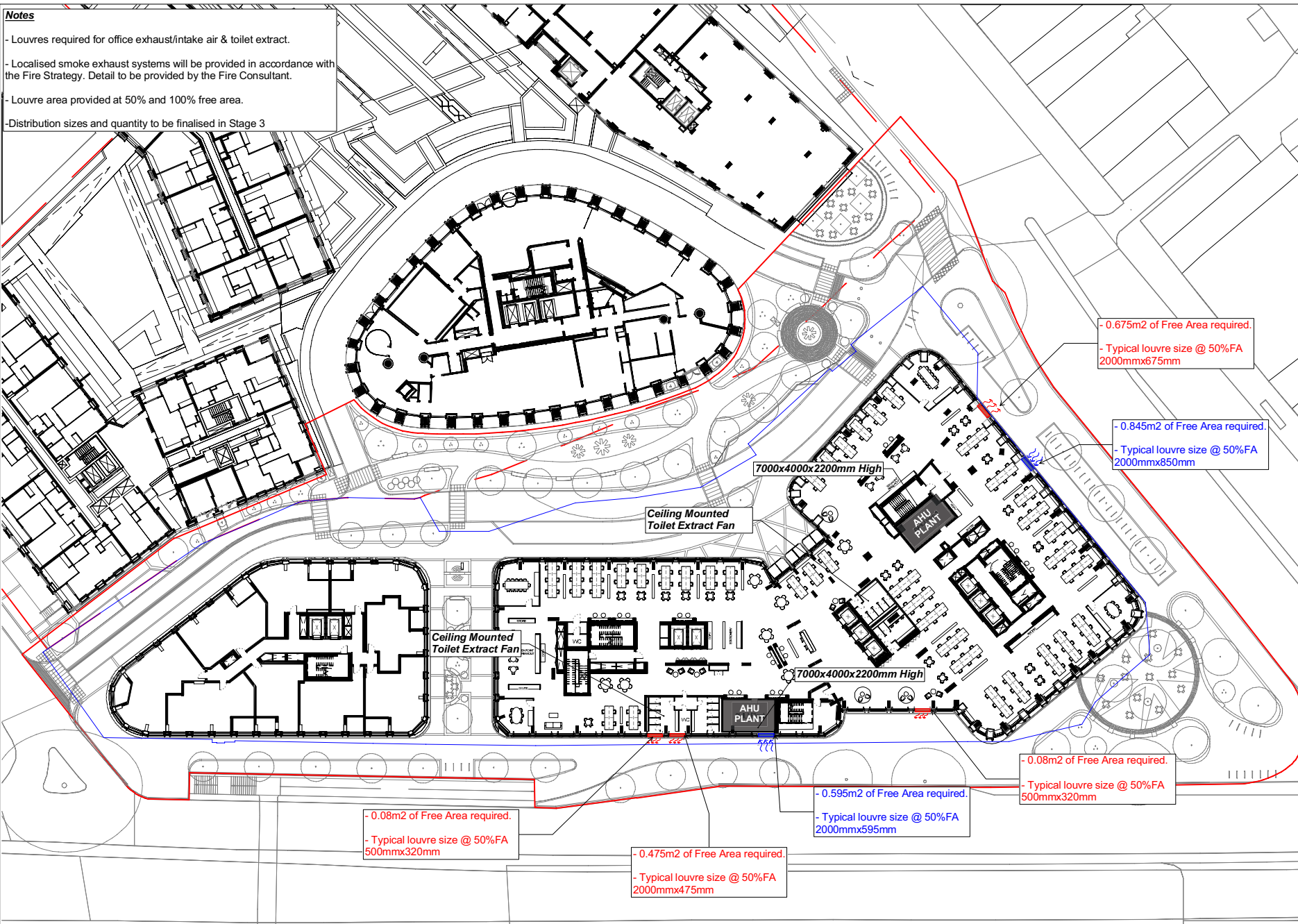
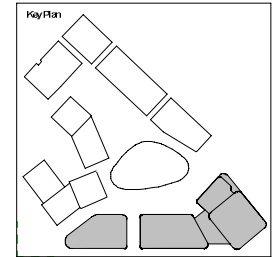


Description	Date	Chk	Rev
SQUIRE & PARTNERS			
Squire and Partners LLP The Department Store 240 Finsbury Road, London EC2A 9FR T: 020 7770 5555			
sqa@squirepartners.com www.squirepartners.com			
Project: Paddington Green Police Station			
Title: GA Plan Ground Floor			
Suitability S0		Status Work in Progress	
Date: 26.02.21	Scale: 1:250	Job Number: 15044	Revision: 15044-SQP-ZZ-00-CP-A-FL01105

Notes

- Louvres required for office exhaust/intake air & toilet extract.
- Localised smoke exhaust systems will be provided in accordance with the Fire Strategy. Detail to be provided by the Fire Consultant.
- Louvre area provided at 50% and 100% free area.
- Distribution sizes and quantity to be finalised in Stage 3

Do not scale from this drawing. All dimensions to be checked on site. All omissions and discrepancies to be reported to the Architect immediately.
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- 0.675m² of Free Area required.
- Typical louvre size @ 50%FA
2000mmx675mm

- 0.845m² of Free Area required.
- Typical louvre size @ 50%FA
2000mmx850mm

- 0.08m² of Free Area required.
- Typical louvre size @ 50%FA
500mmx320mm

- 0.595m² of Free Area required.
- Typical louvre size @ 50%FA
2000mmx595mm

- 0.08m² of Free Area required.
- Typical louvre size @ 50%FA
500mmx320mm

- 0.475m² of Free Area required.
- Typical louvre size @ 50%FA
2000mmx475mm



Project:
Paddington Green Police Station

Title:
OFFICE AHU PLANT PROVISION - LEVEL 01

Made by:
JR/RR/AA

Checked by:
NR

Job No.
70069424

Revision:
P01

Sketch No.
PGPS-WSP-SK-CS-0008

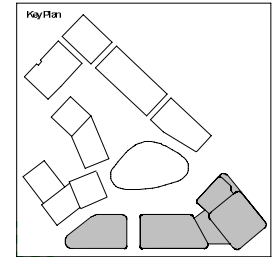
Date:
19/03/21

Page No.
1 of 2

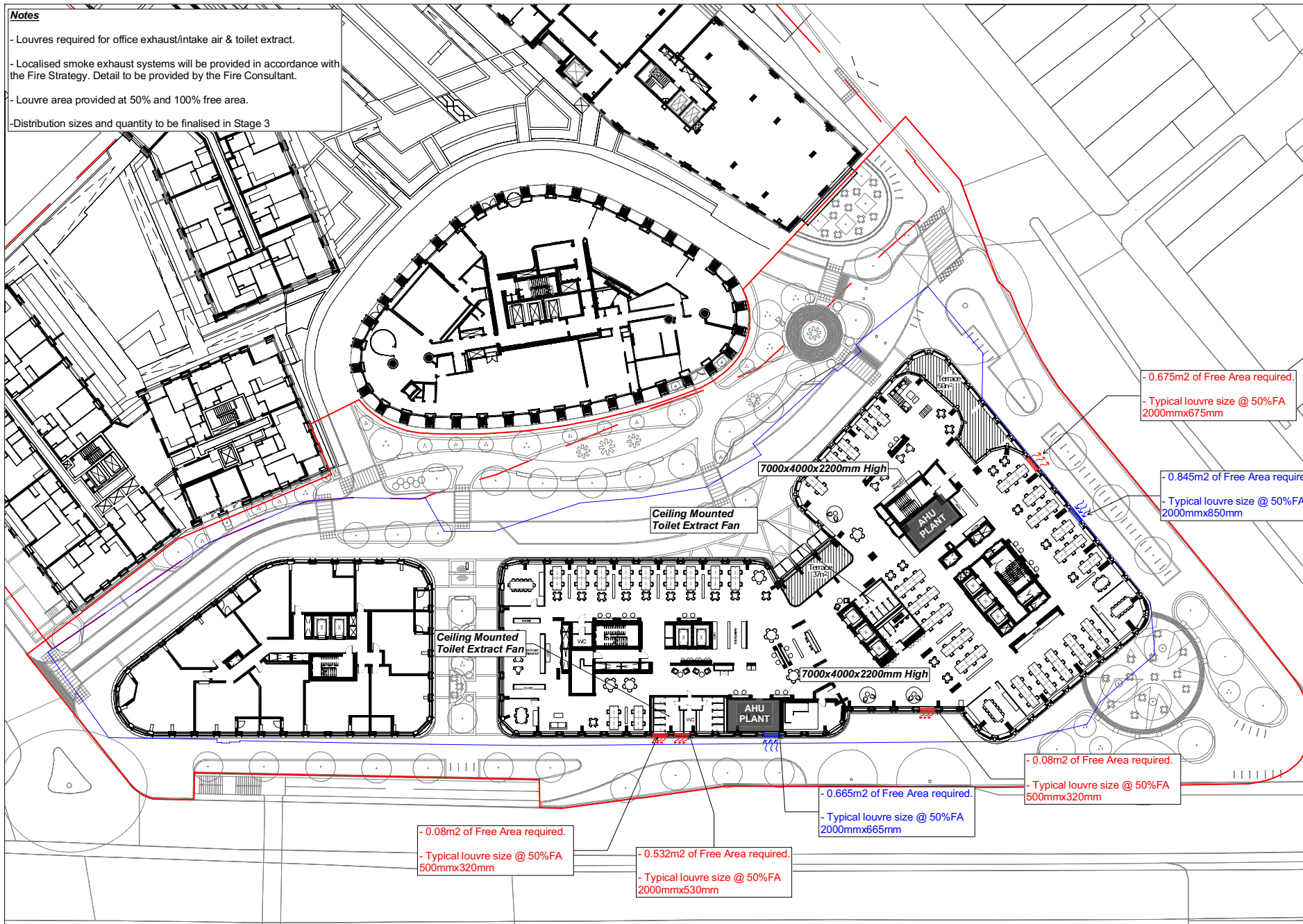
Notes

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PODIUM - TYPICAL COMMERCIAL RISERS



- 0.675m² of Free Area required.
- Typical louvre size @ 50%FA
2000mmx675mm

- 0.845m² of Free Area required.
- Typical louvre size @ 50%FA
2000mmx850mm

- 0.08m² of Free Area required.
- Typical louvre size @ 50%FA
500mmx320mm

- 0.665m² of Free Area required.
- Typical louvre size @ 50%FA
2000mmx665mm

- 0.08m² of Free Area required.
- Typical louvre size @ 50%FA
500mmx320mm

- 0.532m² of Free Area required.
- Typical louvre size @ 50%FA
2000mmx530mm



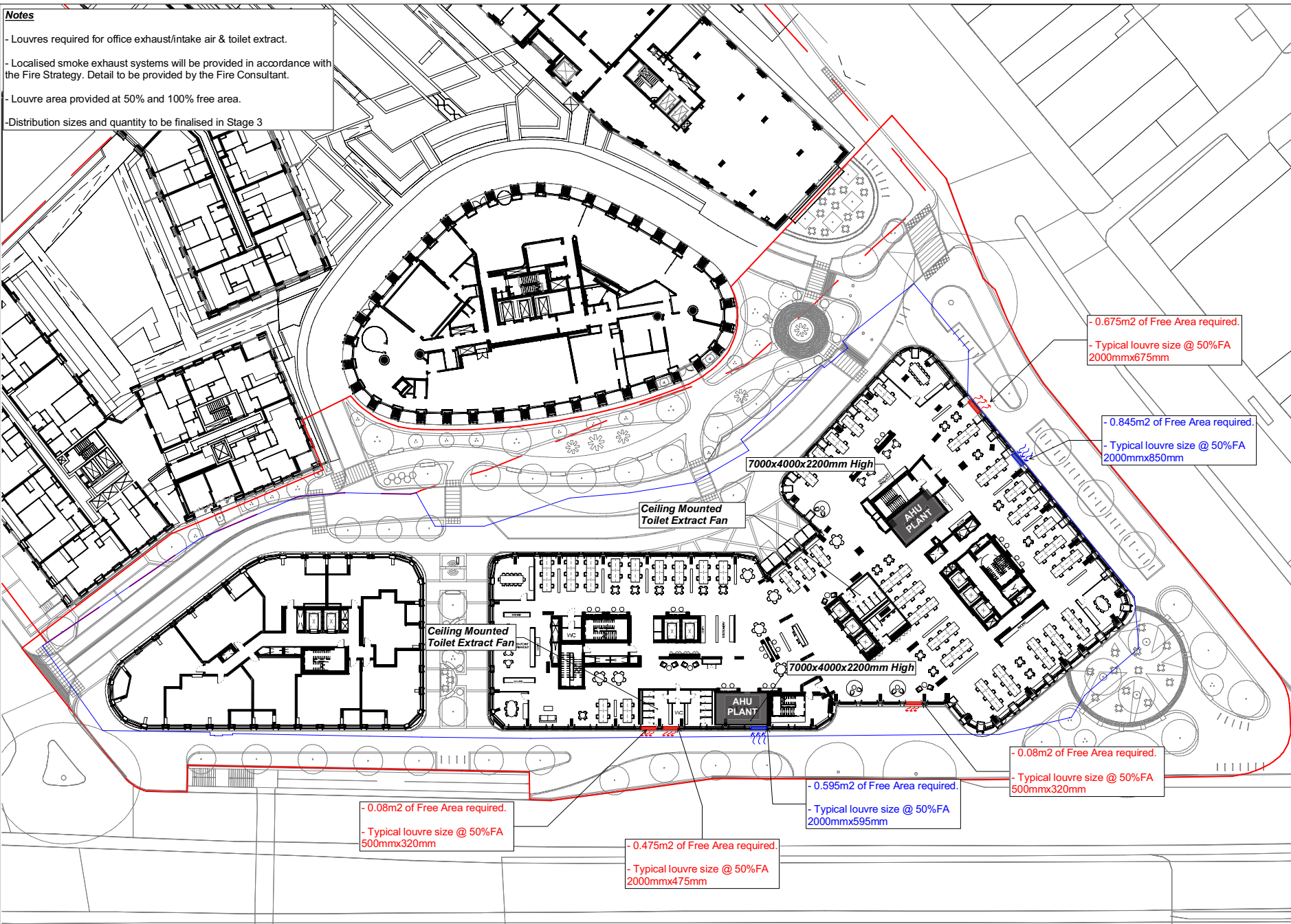
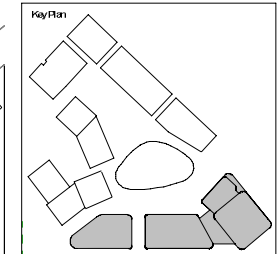
Project:
Paddington Green Police Station
Title:
OFFICE AHU PLANT PROVISION - LEVEL 02

Made by. JR/RR/AA	Job No. 70069424	Date. 19/03/21
Checked by. NR	Revision. P01	Page No. 2 of 2
	Sketch No. PGPS-WSP-SK-CS-0008	

Notes

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- Localised smoke exhaust systems will be provided in accordance with the Fire Strategy. Detail to be provided by the Fire Consultant.
- Louvre area provided at 50% and 100% free area.
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500mmx320mm

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- Typical louvre size @ 50%FA
2000mmx595mm

- 0.08m² of Free Area required.
- Typical louvre size @ 50%FA
500mmx320mm

- 0.475m² of Free Area required.
- Typical louvre size @ 50%FA
2000mmx475mm



Project:
Paddington Green Police Station

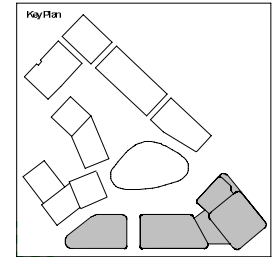
Title:
OFFICE AHU PLANT PROVISION - LEVEL 01

Made by. JR/RR/AA	Job No. 70069424	Date. 19/03/21
Checked by. NR	Revision. P01	Page No. 1 of 2
	Sketch No. PGPS-WSP-SK-CS-0008	

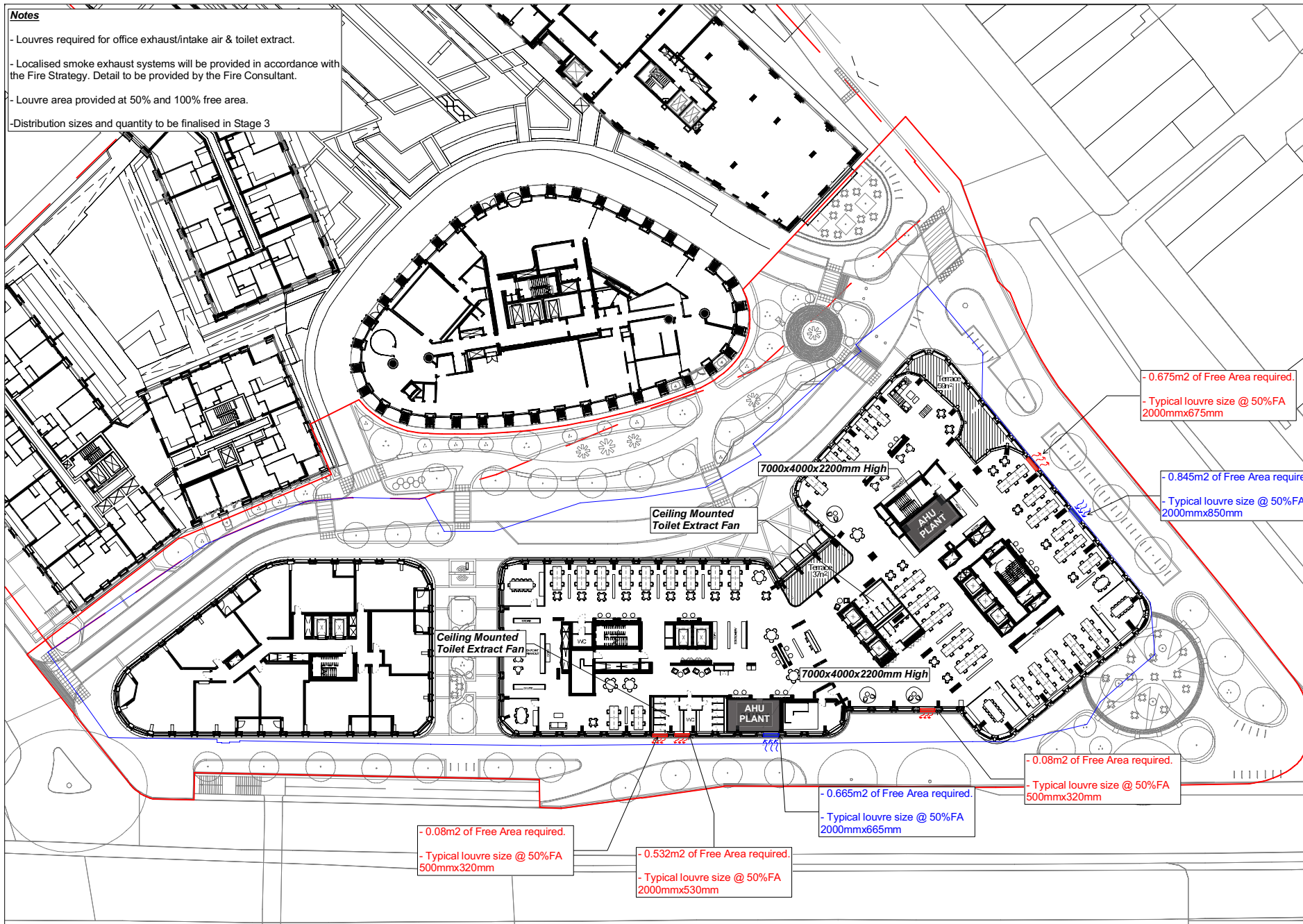
Notes

- Louvres required for office exhaust/intake air & toilet extract.
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- Louvre area provided at 50% and 100% free area.
- Distribution sizes and quantity to be finalised in Stage 3

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- Typical louvre size @ 50%FA
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- Typical louvre size @ 50%FA
2000mmx530mm



Project:
Paddington Green Police Station
Title:
OFFICE AHU PLANT PROVISION - LEVEL 02

Made by. JR/RR/AA	Job No. 70069424	Date. 19/03/21
Checked by. NR	Revision. P01	Page No. 2 of 2
	Sketch No. PGPS-WSP-SK-CS-0008	



Project

PADDINGTON GREEN POLICE STATION

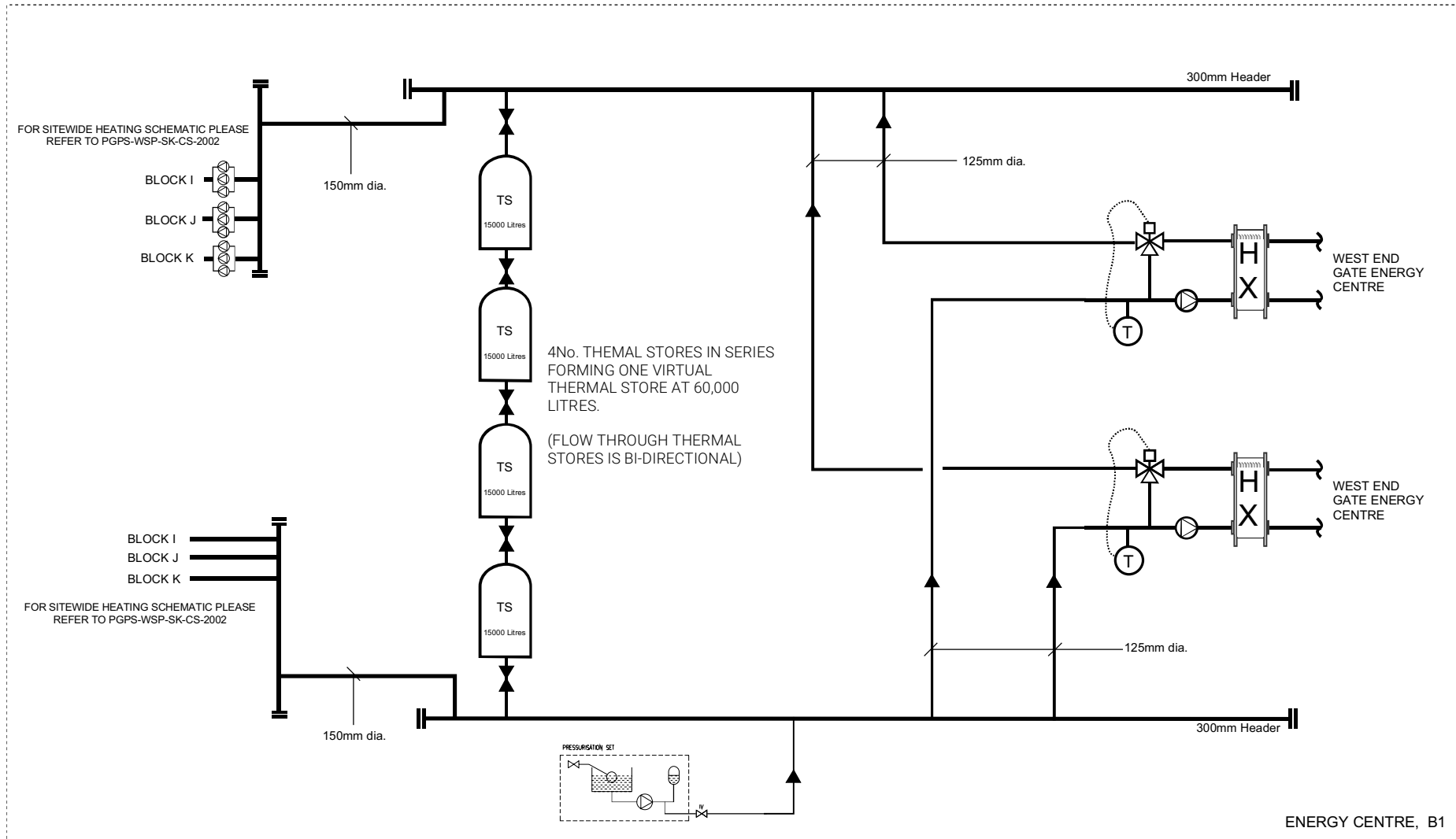
Title.

MECHANICAL SERVICES - ENERGY CENTRE CONCEPT SCHEMATIC

Made by. AA	Job No. 70069424	Date. 19/03/2021
Checked by. NR	Revision. P01	Page No. 1 of 1
Sketch No PGPS-WSP-SK-CS-2001		

NOTES

- 1. INFORMATION IS INDICATIVE TO PROVIDE DESIGN INTENT ONLY.
- 2. DISTRIBUTION SIZES AND QUANTITY SHALL BE FINALISED IN STAGE 3.
- 3. INFORMATION SHALL BE REVIEWED IN CONJUNCTION WITH ALL OTHER DISCIPLINES AND STAGE REPORTS, DDNS, SKETCHES.



FOR SITEWIDE HEATING SCHEMATIC PLEASE REFER TO PGPS-WSP-SK-CS-2002



Project

PADDINGTON GREEN POLICE STATION

Title

MECHANICAL SERVICES - HEATING & COOLING CONCEPT SCHEMATIC

Made by: AA

Job No. 70069424

Date. 19/03/2021

Checked by:

Revision. P01

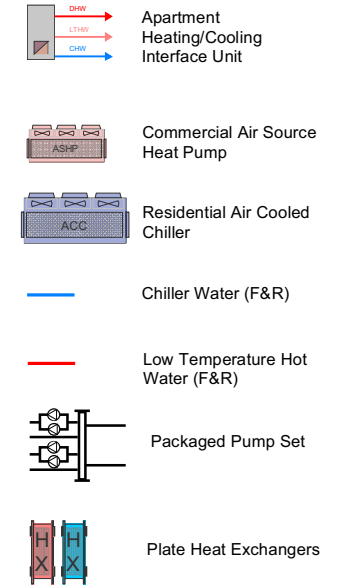
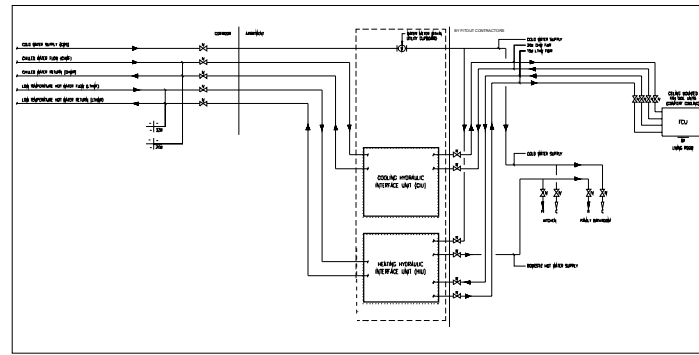
Page No. 1 of 1

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Sketch No. PGPS-WSP-SK-CS-2002

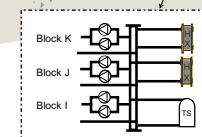
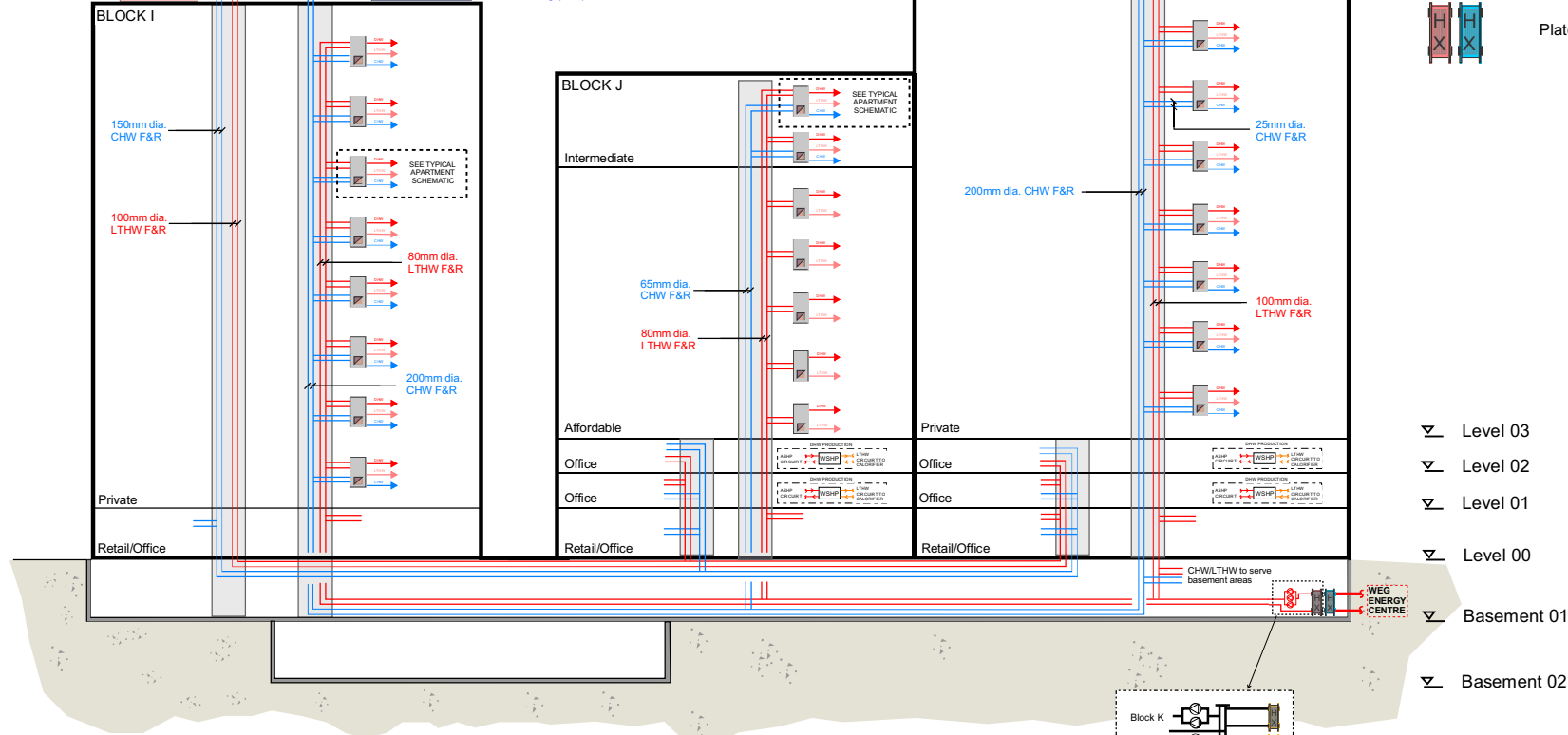
NOTES

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2. DISTRIBUTION SIZES AND QUANTITY SHALL BE FINALISED IN STAGE 3.
3. INFORMATION SHALL BE REVIEWED IN CONJUNCTION WITH ALL OTHER DISCIPLINES AND STAGE REPORTS, DDNS, SKETCHES.
4. FOR CORRIDOR OVERHEATING STRATEGY PLEASE REFER TO PGPS-WSP-SK-CS-2003. SMOKE VENTILATION SHAFTS TO BE USED FOR ENVIRONMENTAL CONTROL.



2No. Units (each at):
 540kW Cooling (6/12)
 550kW Heating (48/42)

2No. Units (each at):
 1000kW Cooling (6/12)
 1No. Unit:
 400kW Cooling (6/12)





EWAD420TZ-XS B2



- > Air cooled chiller
- > Inverter Driven Single Screw compressor
- > Gold efficiency version
- > Standard sound configuration
- > R134a refrigerant

- ➔ **Unit description:** Daikin air-cooled chiller with inverter driven screw compressor and R134a refrigerant. Color: Ivory White (Munsell code 5Y7.5/1) (±RAL7044).
- ➔ **Compressor:** Latest design Daikin single screw compressor enjoying Variable Volume Ratio (VVR) technology for optimized unit performances at any load and operating condition. Daikin design refrigerant cooled inverter integrated within compressor casing. Sophisticated unit control logic allows the inverter to modulate compressor speed minimizing power consumption and noise emission at any load condition.
- ➔ **Evaporator:** New generation shell and tube (dual compressor models) or plate heat type (single compressor models) assuring optimal heat transfer and minimized water pressure drops.
- ➔ **Condenser:** Full body Aluminum “Long Life Alloy” Microchannel coils providing superior resistance to corrosion compared to standard aluminum alloy. Coils’ layout designed to guarantee optimized heat transfer allowing maximized performances and reduced turbulence for low noise emission.
- ➔ **Condenser coil fans:** The condenser fans are propeller type with high efficiency design blades to maximize performances. The material of the blades is glass-reinforced resin and each fan is protected by a guard. Fan motors are internally protected from over temperature and are IP54.
- ➔ **Refrigerant circuit:** Each unit has one or two independent refrigerant circuits and each one includes: Compressor Inverter driven with integrated oil separator, Electronic expansion valve, Discharge line shut off valve, Liquid line shut off valve, Sight glass with moisture indicator, Filter drier, Charging valves, High pressure switch, High pressure transducers, Low pressure transducers, Oil pressure transducer, Suction temperature sensor.
- ➔ **Electrical:** Control and power sections are located in the main panel that is manufactured to ensure protection against all weather conditions. The electrical panel is IP54 and internally protected against possible accidental contact with live parts. The main panel is fitted with a main switch interlocked door that shuts off power supply when opening.
- ➔ **Controller:** Latest generation MicroTech III Type. Providing monitoring and control functions required for an efficient and trouble free operation of the chiller. Sophisticated software with predictive logic selects the most energy efficient combination of compressor load and electronic expansion valve position keeping stable operating conditions and maximizing chiller efficiency and reliability. Unit is compatible with Daikin on Site platform for remote monitoring, preventive maintenance and system optimization.



EWAD420TZ-XS B2

Performances calculated according to EN14511-3:2013


Cooling mode performances

Cooling capacity	408.7 kW	Evaporator water IN/OUT	12.00 °C / 6.00 °C
Power input	130.2 kW	Evaporator water flow	16.26 l/s
EER Cooling Efficiency	3.139 kW / kW	Evaporator pressure drops	23.1 kPa
		Ambient temperature	35.0 °C
IPLV.IP	6.360 kW / kW	Lw / Lp @ 1m	99 dB(A) / 79 dB(A)
SEER / ηs	5.03 / 198.2%	Evaporator fluid	Water
SEPR	6.25	Evaporator fouling factor	0.000 m²C/W

SEER declared according to EN14825, fan coil application 12/7°C (inlet/outlet) water temperatures. SEPR declared according to EN14825:2018, high temperature process cooling application. Sound power level according to ISO 9614-1. IPLV.IP and seasonal efficiency data generally refer to standard unit without options

Unit information

Compressor type	Inverter Driven Single Screw	Refrigerant type	R134a
Capacity control	Stepless	Condenser type	Microchannel
Compressor N°	2	Condenser fans N°	10
Circuit N°	2	Condenser fans control	VFD
Refrigerant charge	64 kg	Altitude	0 MSL
Nominal air flow	37962 l/s	Evaporator type	Shell & Tubes

Actual refrigerant charge depends on the final unit construction, refer to unit nameplate.

Electrical information

Power supply	400 V / 50.0 Hz / 3 Ph	Max. inrush current	0 A
Running current	233.21 A	Compressor starting method	Inverter
Max. Running current	309 A		
Max. current wires sizing	339.77 A		

Voltage tolerance ± 10%. Phase Voltage unbalance ± 3%. Electrical data referred to standard unit without options, refer to unit name plate data.



EWAD420TZ-XS B2

Performances calculated according to EN14511-3:2013

Acoustic information

Sound pressure level at 1 m from the unit (rif. 2×10^{-5} Pa)								
63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	db(A)
79.0	76.0	76.0	79.0	74.0	69.0	61.0	54.0	79.0

Values referred to Evap. IN/OUT 12/7°C and 35°C Amb., full load operation, standard unit configuration without options. Sound pressure level calculated from sound power level. Sound pressure in octave band is for information only and not considered binding.

Physical information

Evap. connections size	139.7 mm	Length	5030 mm
		Width	2282 mm
Weight shipping/operating	4260 kg / 4422 kg	Height	2540 mm

Information referred to standard unit configuration without options, refer to certified unit drawing.



EWAD420TZ-XS B2

Performances calculated according to EN14511-3:2013



Certification notes



Certified in accordance with Eurovent Certification Program: Liquid Chilling Packages and Heat Pumps (LCP-HP). Standard ratings are specified in the section "Rating requirements" of the Rating Standards. All standard ratings are verified by tests conducted in accordance with the following standards: EN 14511-3:2013 (performance testing) and ISO 9614 (acoustic testing).

Within the scope of AHRI Air-Cooled Water-Chilling Packages Certification Program. AHRI Certified performance may be obtained from the manufacturer's representative

General notes

For more information about the above selected product, please go to <http://www.daikineurope.com/industrial/>. Unit performances are reproducible in laboratory test environment only in accordance to recognized industry standards. This technical data sheet is generated by Daikin Applied Tool software designed and distributed by Daikin Applied Europe S.p.A. The present software does not constitute an offer binding upon Daikin Applied Europe S.p.A who compiled the content of this software to the best of its knowledge. No express or implied warranty is given for the completeness, accuracy, reliability or fitness for particular purpose of its content and the products and services presented therein. Specifications are subject to change without prior notice. Product images are indicative only and are intended for illustrative purposes only; pictures may be differed from the ordered product and are subject to change without prior notice. Daikin Applied Europe S.p.A. explicitly rejects any liability for any direct or indirect damage, in the broadest sense, arising from or related to the use and/or interpretation of this document. All content is copyrighted by Daikin Applied Europe S.p.A.





EWADC11TZ-XS B2



- > Air cooled chiller
- > Inverter Driven Single Screw compressor
- > Gold efficiency version
- > Standard sound configuration
- > R134a refrigerant

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- **Evaporator:** New generation shell and tube (dual compressor models) or plate heat type (single compressor models) assuring optimal heat transfer and minimized water pressure drops.
- **Condenser:** Full body Aluminum “Long Life Alloy” Microchannel coils providing superior resistance to corrosion compared to standard aluminum alloy. Coils’ layout designed to guarantee optimized heat transfer allowing maximized performances and reduced turbulence for low noise emission.
- **Condenser coil fans:** The condenser fans are propeller type with high efficiency design blades to maximize performances. The material of the blades is glass-reinforced resin and each fan is protected by a guard. Fan motors are internally protected from over temperature and are IP54.
- **Refrigerant circuit:** Each unit has one or two independent refrigerant circuits and each one includes: Compressor Inverter driven with integrated oil separator, Electronic expansion valve, Discharge line shut off valve, Liquid line shut off valve, Sight glass with moisture indicator, Filter drier, Charging valves, High pressure switch, High pressure transducers, Low pressure transducers, Oil pressure transducer, Suction temperature sensor.
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- **Controller:** Latest generation MicroTech III Type. Providing monitoring and control functions required for an efficient and trouble free operation of the chiller. Sophisticated software with predictive logic selects the most energy efficient combination of compressor load and electronic expansion valve position keeping stable operating conditions and maximizing chiller efficiency and reliability. Unit is compatible with Daikin on Site platform for remote monitoring, preventive maintenance and system optimization.



EWADC11TZ-XS B2

Performances calculated according to EN14511-3:2013


Cooling mode performances

Cooling capacity	1024 kW	Evaporator water IN/OUT	12.00 °C / 6.00 °C
Power input	315.5 kW	Evaporator water flow	40.72 l/s
EER Cooling Efficiency	3.245 kW / kW	Evaporator pressure drops	25.3 kPa
		Ambient temperature	35.0 °C
IPLV.IP	6.320 kW / kW	Lw / Lp @ 1m	102 dB(A) / 79 dB(A)
SEER / ηs	6.00 / 237.0%	Evaporator fluid	Water
SEPR	8.25	Evaporator fouling factor	0.000 m²C/W

SEER declared according to EN14825, fan coil application 12/7°C (inlet/outlet) water temperatures. SEPR declared according to EN14825:2018, high temperature process cooling application. Sound power level according to ISO 9614-1. IPLV.IP and seasonal efficiency data generally refer to standard unit without options

Unit information

Compressor type	Inverter Driven Single Screw	Refrigerant type	R134a
Capacity control	Stepless	Condenser type	Microchannel
Compressor N°	2	Condenser fans N°	22
Circuit N°	2	Condenser fans control	VFD
Refrigerant charge	143 kg	Altitude	0 MSL
Nominal air flow	83515 l/s	Evaporator type	Shell & Tubes

Actual refrigerant charge depends on the final unit construction, refer to unit nameplate.

Electrical information

Power supply	400 V / 50.0 Hz / 3 Ph	Max. inrush current	0 A
Running current	532.97 A	Compressor starting method	Inverter
Max. Running current	745 A		
Max. current wires sizing	819.01 A		

Voltage tolerance ± 10%. Phase Voltage unbalance ± 3%. Electrical data referred to standard unit without options, refer to unit name plate data.



EWADC11TZ-XS B2

Performances calculated according to EN14511-3:2013

Acoustic information**Sound pressure level at 1 m from the unit (rif. 2×10^{-5} Pa)**

63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	db(A)
72.0	65.0	63.0	80.0	74.0	67.0	55.0	51.0	79.0

Values referred to Evap. IN/OUT 12/7°C and 35°C Amb., full load operation, standard unit configuration without options. Sound pressure level calculated from sound power level. Sound pressure in octave band is for information only and not considered binding.

Physical information

Evap. connections size	219.1 mm	Length	10488 mm
		Width	2282 mm
Weight shipping/operating	7258 kg / 7708 kg	Height	2540 mm

Information referred to standard unit configuration without options, refer to certified unit drawing.



EWADC11TZ-XS B2

Performances calculated according to EN14511-3:2013



Certification notes



Certified in accordance with Eurovent Certification Program: Liquid Chilling Packages and Heat Pumps (LCP-HP). Standard ratings are specified in the section "Rating requirements" of the Rating Standards. All standard ratings are verified by tests conducted in accordance with the following standards: EN 14511-3:2013 (performance testing) and ISO 9614 (acoustic testing).

Within the scope of AHRI Air-Cooled Water-Chilling Packages Certification Program. AHRI Certified performance may be obtained from the manufacturer's representative

General notes

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EWYD6004ZXR2

- > Air to water 4 pipe unit
- > Inverter Driven Single Screw compressor
- > Gold efficiency version
- > Reduced sound configuration
- > R134a refrigerant



- **Unit description** : Daikin air to water 4 pipe unit with inverter driven screw compressor and R134a refrigerant. Color: Ivory White (Munsell code 5Y7.5/1) (±RAL7044).
- **Compressor** : Latest design Daikin single screw compressor enjoying Variable Volume Ratio (VVR) technology for optimized unit performances at any load and operating condition. Daikin design refrigerant cooled inverter integrated within compressor casing. Sophisticated unit control logic allows the inverter to modulate compressor speed minimizing power consumption and noise emission at any load condition.
- **Cold side heat exchanger**: New generation shell and tube assuring optimal heat transfer and minimized water pressure drops.
- **Hot side heat exchanger** : New generation shell and tube assuring optimal heat transfer and minimized water pressure drops.
- **Source heat exchanger** : The source heat exchanger is manufactured with internally enhanced seamless copper tubes arranged in a staggered row pattern and mechanically expanded into lanced and rippled aluminum condenser fins with full fin collars. An integral sub-cooler circuit provides sub-cooling to effectively eliminate liquid flashing and increase capacity without increasing the power input.
- **Coil fans** : The condenser fans are propeller type with high efficiency design blades to maximize performances. The material of the blades is glass-reinforced resin and each fan is protected by a guard. Fan motors are internally protected from over temperature and are IP54.
- **Refrigerant circuit** : Each unit has two independent refrigerant circuits and each one includes: Compressor Inverter driven with integrated oil separator, Electronic expansion valve for heating and cooling, Discharge line shut off valve, Liquid line shut off valve, Sight glass with moisture indicator, Filter drier, Charging valves, High pressure switch, High pressure transducers, Low pressure transducers, Oil pressure transducer, Suction temperature sensor.
- **Electrical** : Control and power sections are located in the main panel that is manufactured to ensure protection against all weather conditions. The electrical panel is IP54 and internally protected against possible accidental contact with live parts. The main panel is fitted with a main switch interlocked door that shuts off power supply when opening.
- **Controller** : Latest generation MicroTech III Type. Providing monitoring and control functions required for an efficient and trouble free operation of the air to water 4 pipe unit. Sophisticated software with predictive logic selects the most energy efficient combination of compressor load and electronic expansion valve position keeping stable operating conditions and maximizing the air to water 4 pipe efficiency and reliability. Unit is compatible with Daikin on Site platform for remote monitoring, preventive maintenance and system optimization.



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Performances calculated according to EN14511-3:2013


Cooling only mode performances

Cooling capacity	537.7 kW	Cold heat exchanger water IN/OUT	12.00 °C / 6.00 °C
Power input	174.2 kW	Cold heat exchanger water flow rate	21.40 l/s
EER Cooling Efficiency	3.087 kW / kW	Cold heat exchanger water pressure drop	27.1 kPa
		Ambient temperature	35.0 °C
		Lw / Lp @ 1m	88 dB(A) / 66 dB(A)
		Cold heat exchanger fluid	Water
		Cold heat exchanger fouling factor	0.000 m²°C/W

Sound power level according to ISO 9614-1.

Heating only mode performances

Heating capacity	548.8 kW	Hot heat exchanger water IN/OUT	42.00 °C / 48.00 °C
Power input	159.9 kW	Hot heat exchanger water flow rate	22.10 l/s
COP Heating Efficiency	3.430 kW / kW	Hot heat exchanger pressure drop	23.0 kPa
		Ambient temperature	7.0 °C
		Hot heat exchanger fluid	Water
		Hot heat exchanger fouling factor	0 m²°C/W

Cooling + Heating mode performances

Cooling capacity	419.32 kW	Cold heat exchanger water IN/OUT	10.61 °C / 6.00 °C
Heating capacity	539.64 kW	Cold heat exchanger water flow rate	21.40 l/s
Power input	120.2 kW	Hot heat exchanger water IN/OUT	42.12 °C / 48.00 °C
TER Cooling + Heating Efficiency	7.98 kW / kW	Hot heat exchanger water flow rate	22.10 l/s

Unit information

Compressor type	Inverter Driven Single Screw	Source heat exchanger type	Shell & Tubes
Capacity control	Inverter	Fans N°	14
Compressor N°	2	Condenser fans control	VFD
Circuit N°	2	Altitude	000 MSL
Refrigerant type	R134a	Cold/Hot heat exchanger type	HFP
Refrigerant charge	235 kg		

Actual refrigerant charge depends on the final unit construction, refer to unit nameplate.

Electrical information

Power supply	400 V / 50.0 Hz / 3 Ph	Max. inrush current	0 A
Running current	302 A	Compressor starting method	Inverter
Max. Running current	473 A		
Max. current wires sizing	520.3 A		

Voltage tolerance ± 10%. Phase Voltage unbalance ± 3%. Electrical data referred to standard unit without options, refer to unit name plate data.



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Performances calculated according to EN14511-3:2013

Acoustic information

Sound pressure level at 1 m from the unit (rif. 2 x 10 ⁻⁵ Pa)								
63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	db(A)
67.0	64.0	63.0	66.0	61.0	56.0	49.0	41.0	66.0

Values referred to Cold heat exchanger water IN/OUT 12/7°C and 35°C Amb. Temp., full load operation, standard unit configuration without options. Sound pressure level calculated from sound power level. Sound pressure in octave band is for information only and not considered binding.

Physical information

Cold heat exchanger connections size	219.1 mm	Length	7625 mm
Hot heat exchanger connections size	219.1 mm	Width	2285 mm
Weight shipping/operating	8015 kg / 9100 kg	Height	2465 mm

Information referred to standard unit configuration without options, refer to certified unit drawing.



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